To ADF

EXHIBIT A

CYPRESS SEMICONDUCTOR

CYPRESS SEMICONDUCTOR INVENTION DISCLOSURE FORM

DISCLOSURE NO PM00027

1. INVENTOR(S)

A. Name SUNDAR NARAYANAN CY Initials SXN Empl. No. 7153 Ext. No. 2806

Citizenship INDIA Dept # R&D Home Phone No. 261-8412.

Home Mailing Address 3423 FOWLER AVENUE, SANTA CLARA, CA 95051

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B. Name _____ CY Initials _____ Empl. No. _____ Ext. No. _____

Citizenship _____ Dept # _____ Home Phone No. _____

Home Mailing Address _____

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C. Name _____ CY Initials _____ Empl. No. _____ Ext. No. _____

Citizenship _____ Dept # _____ Home Phone No. _____

Home Mailing Address _____

2. TITLE OF INVENTION ONON Stack to get uniform oxide thickness at end of Nitride Strip.

3. CONCEPTION OF INVENTION

A. Date of first drawing or drawings _____
Where can first drawing be found My Notebook.

B. Date of first written description _____
Where is description found SXN's Notebook.

C. Date of first oral disclosure to others _____
To whom? K. RAMKUMAR.

4. CONSTRUCTION OF DEVICE

A. Date Completed _____
B. Was prototype made? _____
C. By whom made? _____
D. Where can the prototype be found? _____

Inventor(s) N. Sundaramoorthy Date _____

Inventor(s) _____ Date _____

Inventor(s) _____ Date _____

Witnessed, Read, and Understood by: Kramkumar Date _____

Witnessed, Read, and Understood by: _____ Date _____
(Each page upon which information is entered should be signed and witnessed.)

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5. **TEST OF DEVICE**

   A. Date: _____ Witness(es): _____

   B. Results: _____

6. **SALE**

   A. Was invention sold or offered for sale? Yes___ No___
   B. Was invention used to make, assemble or test a commercial product? Yes___ No___
   C. Will invention be sold, offered for sale, sampled, or used to make, assemble or test a commercial product? Yes___ No___
   D. Actual or estimated date of first sale, offer or commercial use _____
   E. Is invention part of a product for which there is a data sheet? Yes___ No___ (If yes, attach a copy)
   F. Actual or estimated date of publication, release or availability of data sheet _____

7. **USE**

   A. Is invention presently being used? Yes_____ No_✓_
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   B. In what product or process is invention presently being used?
***

Are there specific plans for its use in near future? In what products or processes?
RAM 7 / RAM 8 and beyond.

8. **RELATED PRINTED PUBLICATIONS, PATENTS, PATENT APPLICATIONS**
SAN's memos on Nitride Strip.

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9. **WAS INVENTION** Conceived (Yes____ (No_✓_ Constructed (Yes____ (No_✓_ Tested (Yes____ (No_✓_ during performance of Government Contract?

   Contract Number _____
   (Give Full Contract Number)

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The description of invention should be written in the inventor's own words and generally should follow the outline given below. Sketches, prints, photos, and other illustrations, as well as memos or reports of any

Inventor(s) N. Sundaram Date _____

Inventor(s) _____ Date _____

Inventor(s) _____ Date _____

Witnessed, Read, and Understood by: Krrrrrrrr Date

Witnessed, Read, and Understood by: _____ Date _____
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nature in which the invention is referred to, if available, should form a part of this disclosure and reference can be made thereto in the descriptions of the invention's construction and operation.

See attached pages (5) pages

roblem: Current Nitride Strip (Phos dip) stops on oxide with unreliable oxide thickness. This uncontrolled oxide thickness leads to Vt variations as the oxide is used as screening oxide for implants.

lutions: None at present!

tainment: Condition Pot to minimize oxide ER. (oxide ER is a function of number of lots previously dipped).

posed ution: Use another Nitride (thin) and oxide layer under the ISONIT so that the oxide affected at the end of ISONIT Strip is the thin oxide layer and not the Base Oxide. We can also do the entire Stack in one furnace (similar to SONOS) and do the entire strip sequence in One Bath.

y this rks: The overetch seen by the actual Base oxide is very minimal compared to current process.

See picture in Page (5).

Inventor(s) N. Sundaramurthy Date

Inventor(s) _____ Date _____

Inventor(s) _____ Date _____

Witnessed, Read, and Understood by: _____ Date

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FOR ANSWERS TO THE FOLLOWING QUESTIONS, USE THE REMAINDER OF SHEET AND THE ATTACHED SHEET(S).

1. General purpose of invention. State in general terms the objects of the invention.
2. Describe old technology, if any, for performing the function of the invention. Provide references, if available.
3. Indicate the disadvantages of the old technology.
4. Describe your invention and its construction, showing the changes, additions and improvements over the old method.
5. Give details of its operation (i.e., how is your invention used?), if not already described under 4.
6. State the advantages of your invention over what has been done before.
7. Indicate any alternate component(s) and/or method(s) of construction.
8. If a joint invention, indicate what contribution was made by each inventor.
9. Describe the features that are believed to be new.
10. State opinion of relative value of invention.

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11. After the disclosure is prepared, it should be signed by the inventor(s) and then read and signed by two witnesses in the space provided at the bottom of each sheet. Forward an electronic copy of this form, as well as a paper copy bearing original signatures, to the Intellectual Property Department.

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Inventor(s) A. Sundaramoorthy Date

Inventor(s) _____ Date _____

Inventor(s) _____ Date _____

Witnessed, Read, and Understood by: [illegible] Date

Witnessed, Read, and Understood by: _____ Date _____
(Each page upon which information is entered should be signed and witnessed.)

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(INSERT ADDITIONAL INFORMATION)

See (5) attached pages.

Inventor(s) V. Sundaramurthy Date

Inventor(s) _____ Date _____

Inventor(s) _____ Date _____

Witnessed, Read, and Understood by: [illegible] Date

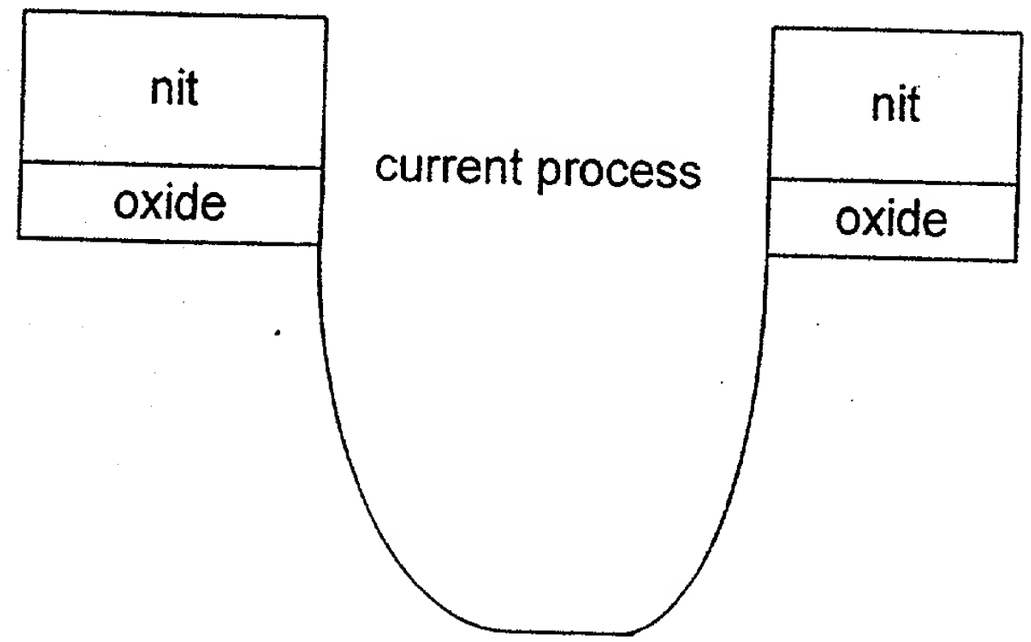
Witnessed, Read, and Understood by: _____ Date _____
(Each page upon which information is entered should be signed and witnessed.)

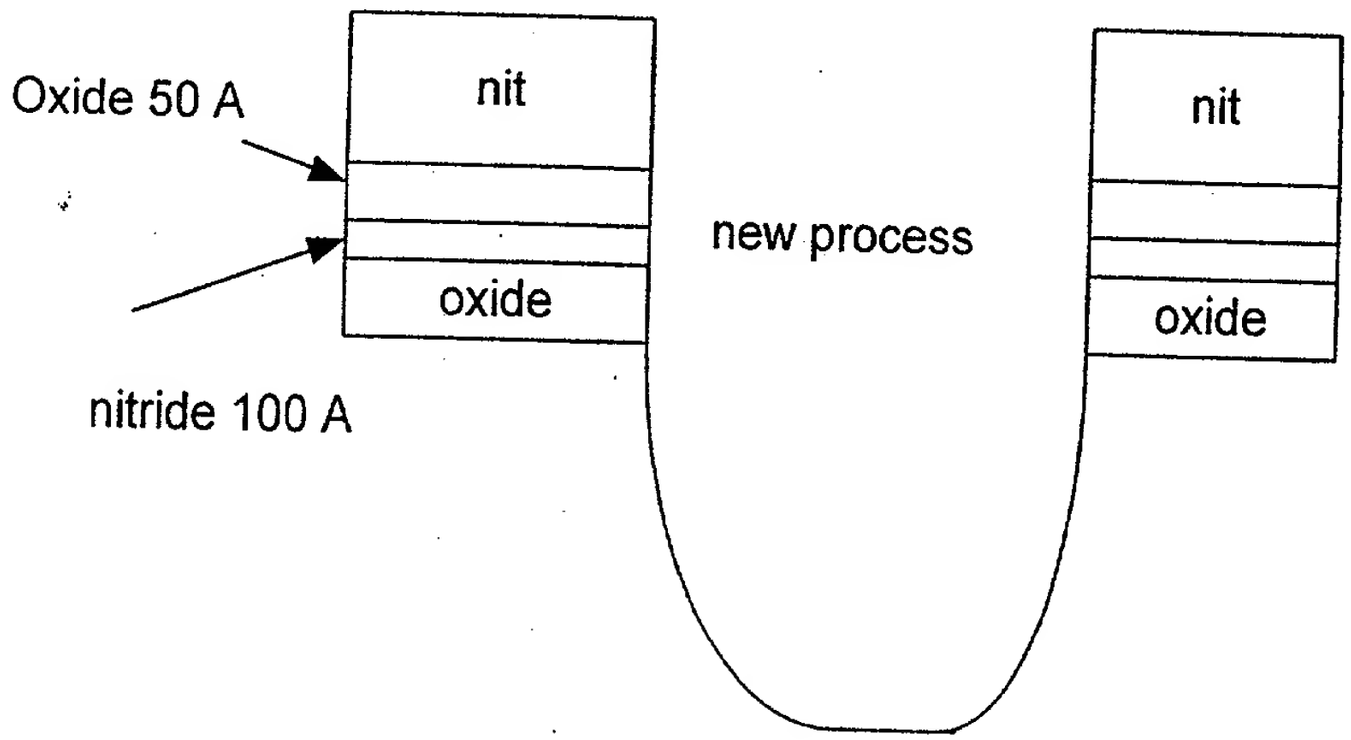
ONON stack to solve Nitride strip problems.

-sundar narayanan

Why ?

Nitride strip has problems when you try to get the same oxide thickness after the hot phosphoric etch. See SXN's last 4 memos on the subject.





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How to solve issue ?

Instead of just a Base Oxide use a nitride and oxide on top of the base oxide before you put ISONIT.
The nitride strip sequence will be different now.

How will this impact process ?

It adds another HF dip and another phosphoric etch to the process. Since the HF and Phosphoric are done in the same bench and since with the new process we can really cut down on overetch time during the first nitride strip, there will be no significant time impact. We will get a nitride strip which gives great consistancy!!!

Old sequence :

HF dip 2 mins to remove left over oxide

Phos dip for 75 mins to remove 1950 nitride with too much OE.

SC1 to clean up surface.

New sequence :

HF dip 2 mins to remove left over oxide

Phos dip for 55 mins to remove 1950 nitride with minimum OE.

HF dip to clean up top oxide (2 mins ;no new recipe reqd.)

Phos dip for 3 mins to remove 100 A nitride (including OE).

How difficult is it to implement this ? (not at all)

ONO mask experience is there at cypress. Photo is no problem.

2 min HF dip recipe already exists.

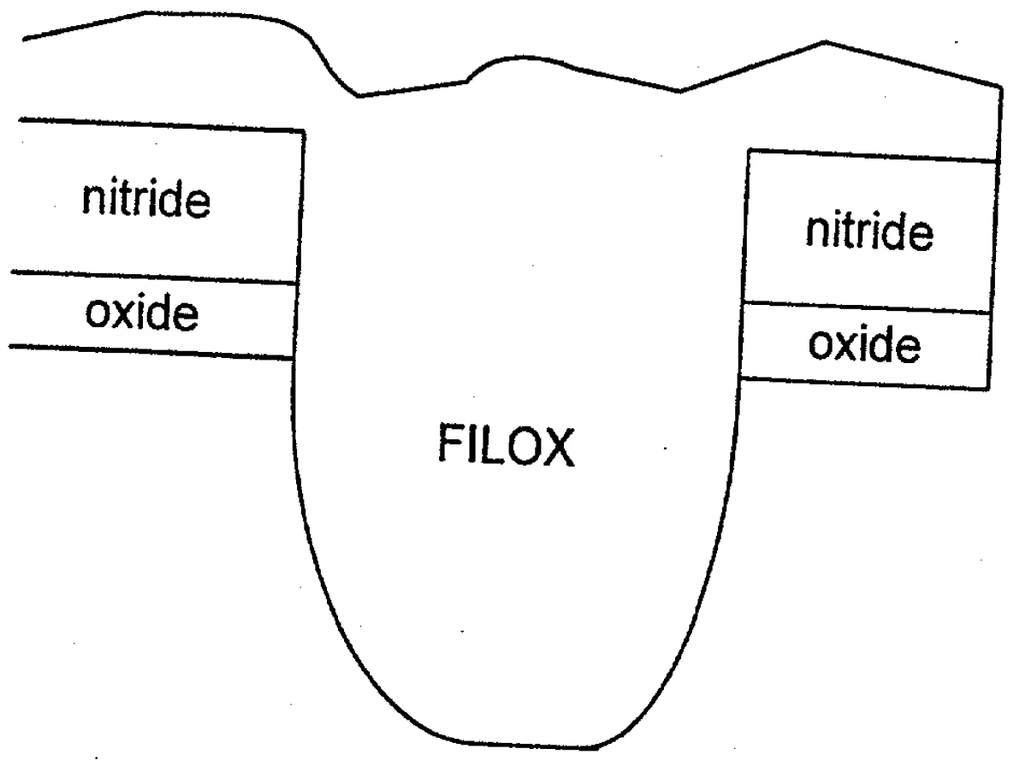
55 min HF dip has been shown to be effective (SXN 36)

Combined with this, we can do PECVD nitride instead of LPCVD nitride and make the process even shorter.

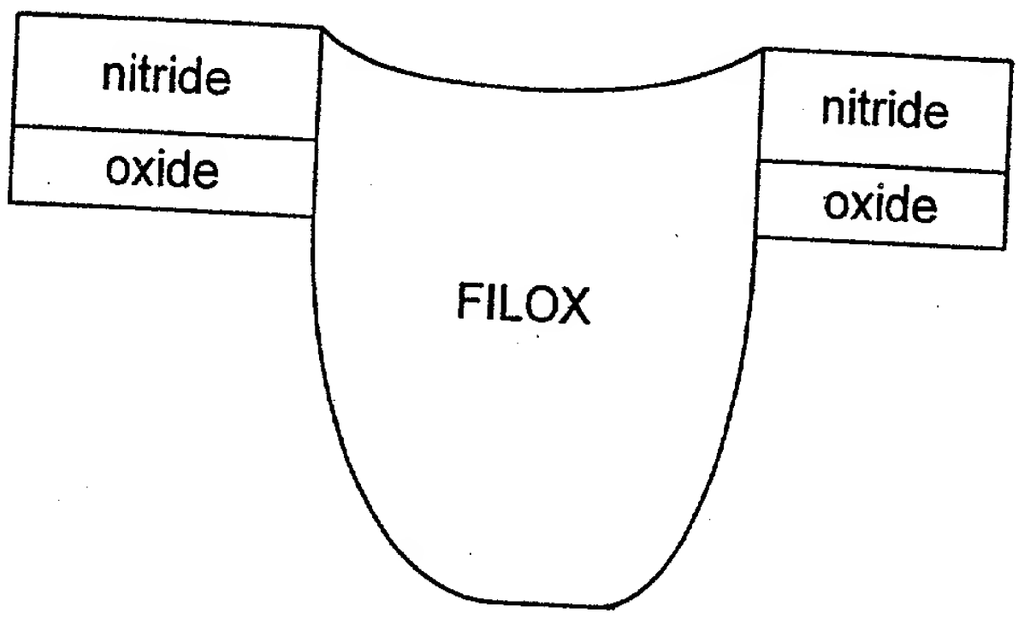
So this process will be compatible with PECVD nitride as well.

This will definitely be a good option for RAM8.

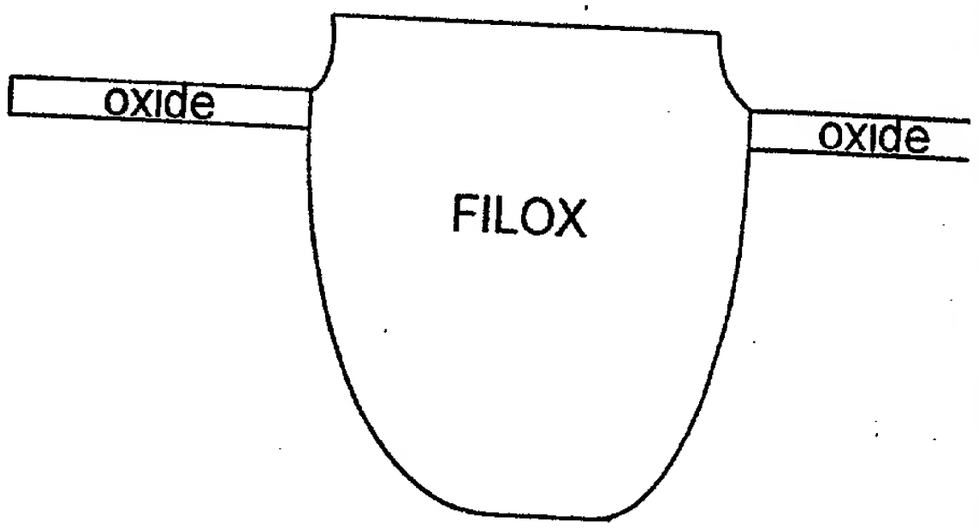
After FILOX



After CMPNIT

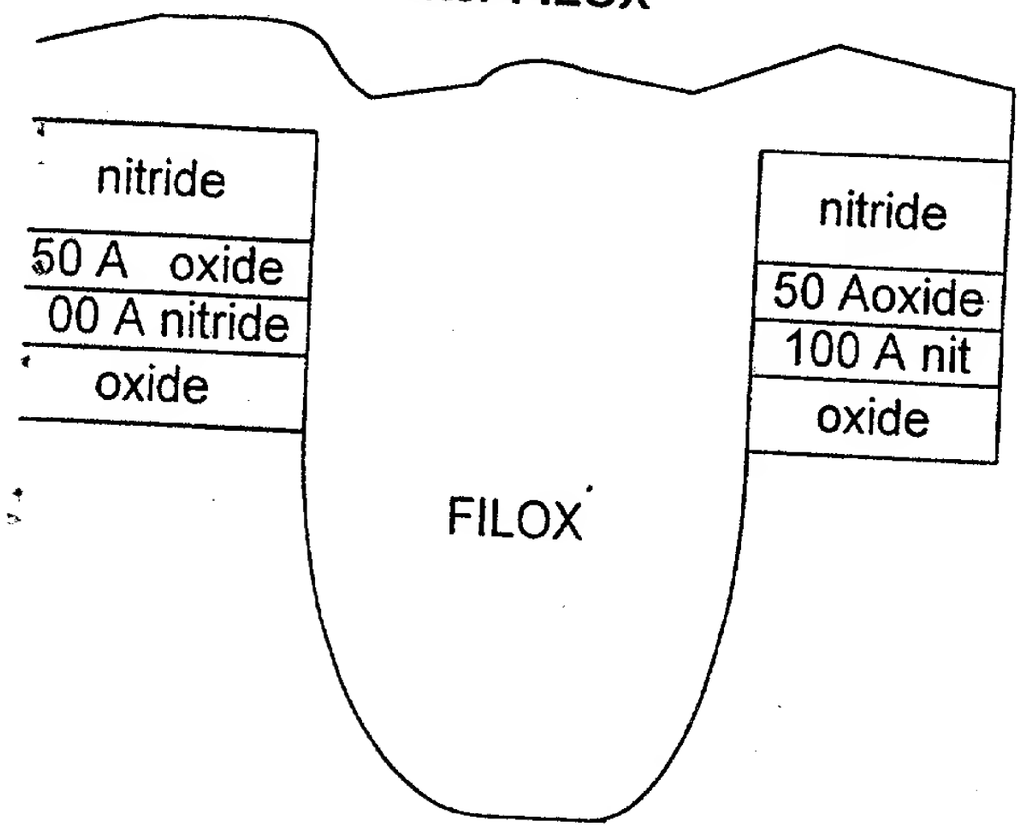


After NS19
2 min HF + 75 min
phosphoric dip

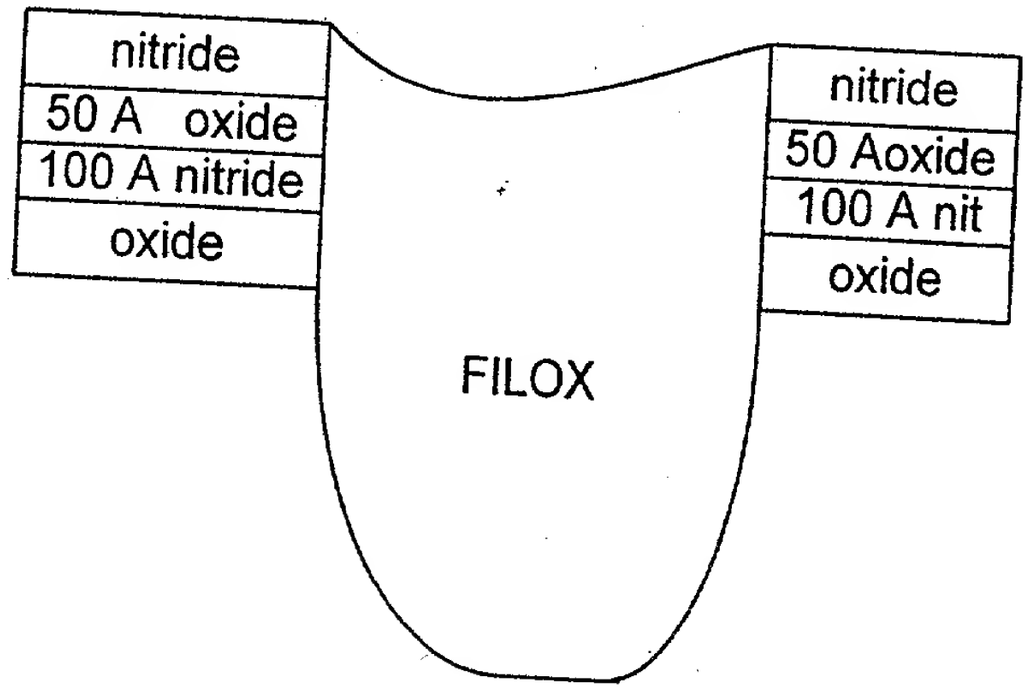


Proposed NEW Process :

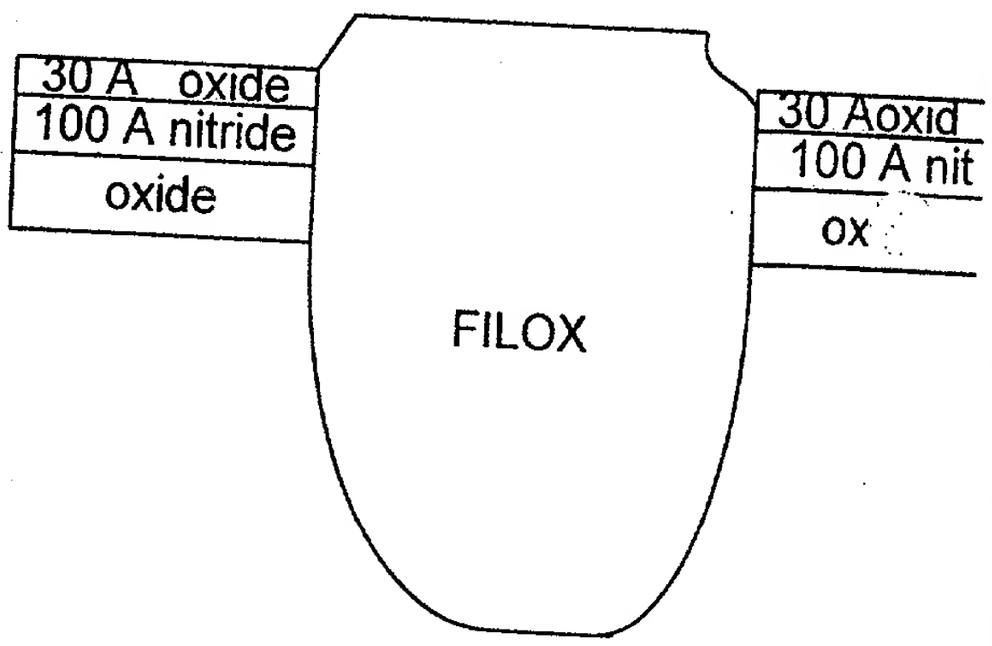
After FILOX



After CMPNIT



After
2 min HF + 55 min
phosphoric dip



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Do another 2 min HF dip to remove 30 A oxide and a 3 minute phosphoric dip to remove 100 A nitride.
Superior oxide uniformity at end of process.